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NACA

RESEARCH MEMORANDUM

EVALUATION OF GUST AND DRAFT VELOCITIES FROM FLIGHTS OF

P-61C AIRPLANES WITHIN THUNDERSTORMS

AUGUST 21, 1946 TO AUGUST 22, 1946

AT ORLANDO, FLORIDA

By

H. B. Tolefson

Langley Memorial Aeronautical Laboratory
Langley Field, Va.

NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS
WASHINGTON



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Tables I and II of this report summarize the gust and draft velocity data for thunderstorm flights 25 and 26 of August 21, 1946 and August 22, 1946, respectively. These data were evaluated from records of NACA instruments installed in P-61C airplanes and are of the type presented in reference 1 for previous flights.

Table III summarizes the readings of a milliammeter which was used in conjunction with other equipment to indicate ambient air temperature during thunderstorm surveys. These data were read from motion-picture records of the instrument and include all cases in which variations in the instrument indications were noted during the present flights.

Langley Memorial Aeronautical Laboratory
National Advisory Committee for Aeronautics
Langley Field, Va.

Harold B. Tolefson
Aeronautical Engineer

Approved:

Richard V. Rhode
Richard V. Rhode
Chief of Aircraft Loads Division

CCB

REFERENCE

1. Tolefson, H. B.: Evaluation of Gust and Draft Velocities from Flights of P-6lc Airplanes within Thunderstorms. August 7, 1946 to August 13, 1946 at Orlando, Florida. NACA RM No. L6K16, 1946.

TABLE I. - SUMMARY OF GUST MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 1 <div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> Time (EST) 160916 - 161415 Length of traverse 307.0 sec, 106,268 ft Initial heading (deg) - 170 </div> </div>					
0 - 3	26,500	---	---	---	0
3 - 6		---	---	---	0
6 - 9		3.8	---	---	1
9 - 12		---	---	---	1
12 - 15		---	6.3	---	3
15 - 18		---	---	---	1
18 - 21		3.8	6.5	66	2
21 - 24		6.7	3.8	199	1
24 - 27		---	---	-13.4	2
27 - 30	26,000	5.4	4.9	35	1
30 - 33		6.0	6.7	---	2
33 - 36		5.4	---	---	2
36 - 39	26,500	---	---	---	4
39 - 42		4.8	5.4	-12.0	4
42 - 45		---	---	---	1
45 - 48		2.5	---	---	3
48 - 51	26,000	6.7	11.3	144	2
51 - 54		6.0	---	---	2
54 - 57		7.0	---	---	1
57 - 60		2.5	---	---	2
60 - 63	26,500	3.5	---	---	3
63 - 66		3.5	5.4	-8.9	2
66 - 69		---	6.0	-14.2	2
69 - 72		3.5	---	---	4
72 - 75		7.9	---	---	2
75 - 78		---	---	---	0
78 - 81		4.4	3.8	181	1
81 - 84		---	---	---	0
84 - 87		---	---	---	0
87 - 90		---	---	---	2
90 - 93		---	---	---	1
93 - 96		---	---	---	1

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 1		Time (EST) 160916 - 161415 Length of traverse 307.0 sec, 106,268 ft Initial heading (deg) 170			
96 - 99	26,500	----	4.4	161	3
99 - 102		----	----	----	2
102 - 105		----	----	----	3
105 - 108		----	----	----	1
Airplane 333 Traverse 2		Time (EST) 162641 - (a) Length of traverse 413.0 sec, 144,872 ft Initial heading (deg) 240			
0 - 3	26,000	7.5 -6.3	-----	24.0	33
3 - 6		13.2 -7.2	-----	-----	7
6 - 9		9.7 -17.9	20.7 -30.6	102	140
9 - 12		17.2 -13.8	-----	-----	8
12 - 15		14.4 -6.3	-----	-----	3
15 - 18		----- -4.4	-----	-----	2
18 - 21	26,500	2.5 -6.0	-----	-----	4
21 - 24		3.1 -----	-----	-----	1
24 - 27		-----	-----	-----	1
27 - 30		7.8 -----	8.9	289	2
30 - 33	26,000	-----	-----	-----	0
33 - 36		-----	-----	-----	0
36 - 39		-----	-----	-----	0
39 - 42		-----	-----	-----	0
42 - 45		4.4 -7.5	-----	-----	2
45 - 48		-----	-----	-----	1
48 - 51		-----	-----	-----	0
51 - 54		4.4 -----	-----	-----	3
54 - 57		7.2 -4.4	-----	-----	3
57 - 60	26,500	-----	-----	-----	0
60 - 63	26,000	4.4 -----	-----	-----	2
63 - 66		6.3 -----	-----	-----	1
66 - 69		----- -5.3	-----	-----	2
69 - 72		-----	-----	-----	1

^aFilm supply for motion picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1945 - Flight 25					
Airplane 333	Time (EST) 162641 - (a)				
Traverse 2	Length of traverse 413.0 sec, 144,872 ft				
	Initial heading (deg) 240				
72 - 75	26,000	—	—	—	1
75 - 78		—	—	—	1
78 - 81		—	—	—	1
81 - 84		—	—	—	0
84 - 87	4.7	-7.8	—	—	3
87 - 90		—	—	—	1
90 - 93		—	—	—	4
93 - 96		—	—	—	2
96 - 99		—	—	—	1
99 - 102		—	—	—	0
102 - 105		—	—	—	1
105 - 108		—	—	—	1
108 - 111		—	—	—	1
111 - 114	4.7	—	3.8	132	2
114 - 117		—	—	—	0
117 - 120		—	—	—	0
120 - 123		—	—	—	1
123 - 126		—	—	—	1
126 - 129		—	—	—	0
129 - 132		—	—	—	0
132 - 135		—	—	—	0
135 - 138		—	—	—	0
138 - 141	4.4	—	—	—	1
141 - 144		—	—	—	0
144 - 147		—	—	—	0
Airplane 333	Time (EST) 163938 - (a)				
Traverse 3	Length of traverse 312.2 sec, 102,146 ft				
	Initial heading (deg) 260				
0 - 3	26,000	—	—	—	0
3 - 6	5.6	—	—	—	1
6 - 9		—	—	—	0

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333	Time (EST) 162938 - (a) Length of traverse 312.2 sec, 102,116 ft Initial heading (deg) 260				
Traverse 3					
9 - 12	26,000	-----	-----	-----	0
12 - 15		-----	-----	-----	0
15 - 18		-----	-----	-----	1
18 - 21		-----	-----	-----	0
21 - 24		4.7	-----	-----	1
24 - 27		-----	-----	-----	1
27 - 30		-----	-----	-----	2
30 - 33		-----	-----	-----	1
33 - 36		-----	-----	-----	1
36 - 39		-----	-----	-----	0
39 - 42		-----	-----	-----	1
42 - 45	25,500	4.3	-----	-----	2
45 - 48	25,000	3.4	-6.8	-----	4
48 - 51		-----	-4.3	-10.5	5
51 - 54		-----	-----	-----	5
54 - 57	25,500	-----	-----	-----	0
57 - 60	26,000	-----	-----	-----	2
60 - 63		5.0	-----	-----	3
63 - 66		5.9	-----	-----	2
66 - 69	25,500	2.8	-5.6	-----	5
69 - 72		6.5	-----	-----	3
72 - 75	26,000	2.8	-----	-18.7	4
75 - 78		-----	-----	-----	0
78 - 81		-----	-----	-----	0
81 - 84		-----	-----	-----	0
84 - 87		5.0	-----	-----	3
87 - 90		-----	-----	-----	1
90 - 93		2.2	-----	-----	6
93 - 96		5.3	-----	-----	2
96 - 99		-----	-----	-----	1
99 - 102		-----	-----	-----	0
102 - 105		-----	-----	-----	0

^aFilm supply for motion-picture camera exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 4	Time (EST) 161952 - 162442 Length of traverse 189.1 sec, 67,813 ft Initial heading (deg) 340				
0 - 3	26,000	---	---	---	0
3 - 6		---	---	---	0
6 - 9	26,500	---	---	---	0
9 - 12		---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21		---	---	---	1
21 - 24		---	---	---	1
24 - 27		---	---	---	0
27 - 30		4.3	---	---	2
30 - 33		3.1	5.5	74	3
33 - 36		2.5	---	---	5
36 - 39		3.4	---	---	2
39 - 42		---	---	---	1
42 - 45	27,000	---	-5.3	---	1
45 - 48		5.3	---	---	1
48 - 51		---	---	---	1
51 - 54		---	---	---	1
54 - 57		---	---	---	2
57 - 60		---	---	---	0
60 - 63		---	---	---	0
63 - 66		---	---	---	0
66 - 69		---	---	---	0
Airplane 331 Traverse 1	Time (EST) 161218 - 161819 Length of traverse 370.5 sec, 121,708 ft Initial heading (deg) 230				
0 - 3	20,500	3.5	-2.5	---	2
3 - 6		6.3	---	---	3
6 - 9		5.1	---	---	5
9 - 12		4.1	4.5	103	4
12 - 15		2.2	-3.5	33	6

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 331	Time (EST) 161218 - 161819 Length of traverse 370.5 sec, 121,708 ft Initial heading (deg) 230				
Traverse 1					
15 - 18	20,500	3.2	---	---	2
18 - 21		2.2	---	---	2
21 - 24		---	-1.9	---	3
24 - 27		---	---	---	1
27 - 30		---	---	---	2
30 - 33		---	---	---	3
33 - 36		---	-6.3	---	4
36 - 39		4.4	-4.7	---	4
39 - 42		4.7	-4.7	---	4
42 - 45		4.1	-2.2	---	4
45 - 48		---	-1.6	---	2
48 - 51		---	-2.2	---	1
51 - 54		---	---	---	1
54 - 57		3.5	-2.8	---	8
57 - 60		4.7	-2.2	7.2	4
60 - 63		---	-5.4	5.8	3
63 - 66		2.8	-2.8	---	3
66 - 69		---	---	---	3
69 - 72		2.8	---	---	1
72 - 75		2.5	---	---	2
75 - 78		2.5	---	---	3
78 - 81		3.5	-3.5	3.6	3
81 - 84		---	---	---	1
84 - 87		3.5	-4.7	---	2
87 - 90		2.2	---	---	3
90 - 93		---	-2.8	---	1
93 - 96		3.5	-2.2	---	2
96 - 99		---	---	---	0
99 - 102		---	---	---	0
102 - 105		4.1	---	---	1
105 - 108		---	---	---	3
108 - 111		4.7	-2.8	---	3
111 - 114		2.8	-2.2	---	4
114 - 117		5.7	-8.2	7.2	7
117 - 120		3.2	-4.2	---	3
120 - 123		2.8	-5.1	16.4	3

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 1		Time (EST) - (b) Length of traverse 233.5 sec, 77,73 ^b ft Initial heading (deg) 210			
0 - 3	14,500	—	—	—	0
3 - 6		7.5	—	—	0
6 - 9		—	-5.0	—	3
9 - 12		1.9	-2.2	—	3
12 - 15		—	-5.6	—	1
15 - 18		9.6	-4.7	114.9	7
18 - 21		5.9	-6.2	10.5	4
21 - 24		—	—	—	2
24 - 27		4.7	-4.7	—	7
27 - 30		—	—	—	0
30 - 33		2.5	—	—	2
33 - 36	15,000	3.4	-2.5	—	2
36 - 39		3.1	-3.7	—	4
39 - 42		6.2	-5.9	5.9	4
42 - 45		7.8	-4.0	5.8	5
45 - 48		—	-4.0	—	5
48 - 51		2.8	-5.0	—	3
51 - 54		9.0	-7.5	—	6
54 - 57		6.8	-3.4	—	3
57 - 60		3.4	-5.9	12.5	5
60 - 63	14,500	7.1	-11.5	—	5
63 - 66	14,000	—	—	—	0
66 - 69		—	-4.0	—	4
69 - 72		3.4	—	—	2
72 - 75		—	—	—	0
75 - 78		—	—	—	0

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 2	$\left. \begin{array}{l} \text{Time (EST) - (b)} \\ \text{Length of traverse } 193.0 \text{ sec, } 65,037 \text{ ft} \\ \text{Initial heading (deg) } 340 \end{array} \right\}$				
0 - 3	16,500	---	---	---	0
3 - 6		7.8	-13.0	---	8
6 - 9		13.6	-11.2	---	8
9 - 12		15.5	-9.0	---	6
12 - 15		18.3	-11.2	---	4
15 - 18		24.2	-21.7	---	6
18 - 21	17,000	14.0	-20.2	38.7	6
21 - 24		16.1	-8.4	33.7	5
24 - 27		8.7	-5.9	297	9
27 - 30		11.5	-3.4	373	5
30 - 33		---	---	399	0
33 - 36		---	---	---	0
36 - 39		---	---	---	0
39 - 42		---	-2.2	---	1
42 - 45		---	---	---	0
45 - 48		---	---	---	0
48 - 51		---	---	---	0
51 - 54		---	---	---	0
54 - 57		---	---	---	0
57 - 60	17,500	---	-8.4	-17.2	2
60 - 63		---	---	452	0
63 - 66		---	---	---	0
Airplane 347 Traverse 3	$\left. \begin{array}{l} \text{Time (EST) - (b)} \\ \text{Length of traverse } 481.7 \text{ sec, } 156,086 \text{ ft} \\ \text{Initial heading (deg) } 130 \end{array} \right\}$				
0 - 3	13,500	3.4	---	6.0	1
3 - 6		3.1	---	7.3	2
6 - 9		6.7	-5.8	---	5
9 - 12	14,000	3.7	-4.3	---	2
12 - 15		---	-5.2	---	4

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 481.7 sec, 156,086 ft Initial heading (deg) 130			
15 - 18	14,000	5.2	-1.8	---	4
18 - 21		---	-3.7	---	2
21 - 24		3.4	-2.4	---	5
24 - 27		2.4	-3.1	6.9	3
27 - 30		2.4	-2.4	7.0	4
30 - 33	14,500	4.6	-2.4	6.4	3
33 - 36		7.6	-8.6	5.9	3
36 - 39		5.2	-2.4	4.1	2
39 - 42		3.7	-3.1	---	3
42 - 45		6.1	-2.4	---	3
45 - 48		---	-5.2	---	4
48 - 51		5.2	-7.0	10.5	4
51 - 54		5.5	-2.4	12.1	5
54 - 57		2.8	---	196	1
57 - 60		---	-2.4	---	3
60 - 63		---	---	---	0
63 - 66		---	---	---	0
66 - 69	15,000	4.9	-3.4	---	2
69 - 72	15,500	5.5	-3.4	12.8	3
72 - 75		2.1	-2.4	5.6	3
75 - 78		---	-4.0	---	2
78 - 81		5.8	-3.1	5.4	5
81 - 84		22.3	-9.5	---	6
84 - 87		10.1	-15.0	---	7
87 - 90		19.0	-23.9	29.1	5
90 - 93		7.6	---	280	1
93 - 96		3.1	-2.4	---	2
96 - 99		4.6	---	7.1	1
99 - 102		15.0	-4.3	248	2
102 - 105		6.4	-11.0	---	8
105 - 108		13.8	-9.8	---	5
108 - 111		6.1	-2.4	---	4
111 - 114		13.8	-8.0	---	6

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 481.7 sec, 156,086 ft Initial heading (deg) 130			
114 - 117	16,000	4.3	-13.8	---	9
117 - 120		---	---	---	0
120 - 123		---	---	---	0
123 - 126		3.7	-2.1	---	2
126 - 129		4.6	---	---	1
129 - 132		---	---	---	0
132 - 135		3.1	---	5.7	1
135 - 138		---	---	269	1
138 - 141		---	---	---	0
141 - 144		---	---	---	0
144 - 147		---	---	---	0
147 - 150		21.1	---	---	1
150 - 153		---	---	---	0
153 - 156		---	---	---	0
Airplane 347 Traverse 4		Time (EST) - (b) Length of traverse 224.4 sec, 73,186 ft Initial heading (deg) 330			
0 - 3	16,000	---	---	---	0
3 - 6		---	---	---	0
6 - 9		6.7	-6.4	5.6	3
9 - 12		7.6	-4.6	5.1	10
12 - 15		5.5	-3.6	8.3	5
15 - 18		2.7	-5.8	9.1	4
18 - 21		13.7	-13.4	---	4
21 - 24		20.1	-8.8	---	5
24 - 27		20.7	-15.5	---	10
27 - 30		9.7	-20.7	---	7
30 - 33		6.4	-1.8	---	2
33 - 36		5.2	-4.6	---	3
36 - 39		3.3	-2.4	5.2	8
39 - 42		4.3	-6.4	65	3

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 4	Time (EST) - (b) Length of traverse 224.4 sec, 73,186 ft Initial heading (deg) 330				
42 - 45	16,500	3.3	-7.3	8.3	---
45 - 48		4.3	-7.4	---	4
48 - 51		---	-1.5	---	1
51 - 54		---	---	---	0
54 - 57		---	-3.3	-6.1	1
57 - 60	17,000	---	---	258	0
60 - 63		---	---	---	0
63 - 66		---	---	---	0
66 - 69		---	---	---	0
69 - 72		---	-2.1	---	1
72 - 75		3.0	---	---	1
Airplane 351 Traverse 1	Time (EST) 155937 - (a) Length of traverse 361.7 sec, 108,601 ft Initial heading (deg) 200				
0 - 3	11,000	4.5	---	5.3	---
3 - 6		---	---	---	0
6 - 9		6.4	---	4.9	89
9 - 12		---	---	---	0
12 - 15		4.8	-6.1	4.6	120
15 - 18		6.4	-5.4	---	5
18 - 21		2.9	-5.4	---	2
21 - 24		7.0	---	7.8	299
24 - 27		---	---	---	1
27 - 30		6.7	---	---	0
30 - 33		6.1	-5.4	---	1
33 - 36		8.6	---	---	4
36 - 39		5.7	---	---	2
					1

^aFilm supply for motion-picture camera exhausted before end of traverse.

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Time (EST) 155937 - (a) Traverse 1 Length of traverse 361.7 sec, 108,601 ft Initial heading (deg) 200					
39 - 42	11,000	4.5	-----	-----	1
42 - 45		7.7	-6.1	-----	2
45 - 48		8.3	-----	16.8	1
48 - 51		10.5	-18.2	6.8	4
51 - 54		10.5	-5.4	-----	4
54 - 57		5.4	-6.1	-----	6
57 - 60		7.0	-7.3	11.6	3
60 - 63		10.2	-10.2	118	4
63 - 66		20.4	-7.3	-----	7
66 - 69		6.1	-15.6	41.7	5
69 - 72		13.1	-9.9	13.7	7
72 - 75	11,500	10.5	-12.8	-----	7
75 - 78		4.1	-5.4	-----	4
78 - 81		-----	-----	-----	0
81 - 84		8.6	-5.4	8.7	4
84 - 87		-----	-----	30	0
87 - 90		-----	-----	-----	0
90 - 93		2.6	-----	-----	1
93 - 96		-----	-----	-----	0
96 - 99		5.7	-----	-----	1
99 - 102		5.7	-5.1	-----	3
102 - 105		9.2	-----	16.8	1
105 - 108		3.8	-----	152	3
108 - 111		4.5	-----	-----	1

^a Film supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351	Time (EST) 161608 - (a)				
Traverse 2	Length of traverse 305.3 sec, 96,681 ft				
	Initial heading (deg.) 340				
0 - 3	11,500	14.5 -13.6	--- 16.2	--- 172	10
3 - 6		17.1 -6.6	26.9 -10.6	318 32	8
6 - 9		22.1 ---	15.7 ---	93 ---	3
9 - 12		5.4 -7.6	8.1 ---	269 ---	2
12 - 15		4.4 -14.5	--- 30.0	--- 60	6
15 - 18		10.4 -9.8	14.6 ---	178 ---	6
18 - 21		4.1 -19.0	--- ---	--- ---	4
21 - 24		6.0 -5.7	8.4 ---	159 ---	4
24 - 27		14.9 -8.5	--- 19.8	--- 229	3
27 - 30		8.8 -7.9	--- ---	--- ---	6
30 - 33		5.7 -9.2	8.5 -8.4	198 160	5
33 - 36		3.8 ---	7.4 ---	224 ---	2
36 - 39		--- 10.4	--- 9.2	--- 244	5
39 - 42		9.2 -12.0	--- 22.0	--- 98	4
42 - 45	11,000	5.4 ---	17.2 ---	401 ---	2
45 - 48		--- 4.1	--- ---	--- ---	1
48 - 51		3.5 -5.1	--- 9.4	--- 165	2
51 - 54		--- 5.1	--- ---	--- ---	1
54 - 57		4.1 ---	4.7 ---	195 ---	1
57 - 60		--- 4.4	--- ---	--- ---	2
60 - 63		4.4 -4.4	--- ---	--- ---	2
63 - 66		--- ---	--- ---	--- ---	0
66 - 69		2.8 ---	--- ---	--- ---	1
69 - 72		2.5 -7.0	--- ---	--- ---	2
72 - 75		--- ---	--- ---	--- ---	0
75 - 78		3.8 ---	7.9 ---	31 ---	2
78 - 81		--- 5.4	--- ---	--- ---	2
81 - 84		2.2 ---	--- ---	--- ---	1
84 - 87		4.4 ---	--- ---	--- ---	1
87 - 90		--- 5.4	--- 17.7	--- 31	2
90 - 93		7.9 -8.8	14.1 ---	122 ---	5
93 - 96		5.4 -9.2	8.6 -14.4	60 244	3
96 - 99		--- 3.8	--- ---	--- ---	1

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351	Time (EST) 163017 - (a)				
Traverse 3	Length of traverse 438.1 sec, 118,387 ft				
	Initial heading (deg) 160				
0 - 3	11,000	4.4	---	---	1
3 - 6		----	-6.3	----	3
6 - 9		11.9	-6.3	15.8	5
9 - 12		4.4	-4.1	----	3
12 - 15		4.4	----	----	1
15 - 18		6.6	----	7.7	2
18 - 21		----	-4.7	-5.3	2
21 - 24		----	-6.6	-11.3	2
24 - 27		7.5	-6.6	9.3	4
27 - 30		----	----	142	0
30 - 33		3.1	----	86	1
33 - 36		----	----	----	0
36 - 39		----	-2.2	----	1
39 - 42		----	----	----	0
42 - 45		5.6	----	----	1
45 - 48		----	----	----	0
48 - 51		3.1	----	----	1
51 - 54		7.2	-5.6	----	3
54 - 57		----	----	----	0
57 - 60		----	-4.1	----	1
60 - 63		2.5	----	5.7	1
63 - 66		2.8	----	4.6	1
66 - 69		----	----	----	0
69 - 72		----	----	----	0
72 - 75		6.3	-6.9	----	3
75 - 78		7.2	-10.0	20.8	7
78 - 81		14.4	-10.7	17.2	6
81 - 84		18.8	-18.5	26.1	7
84 - 87	10,500	6.0	-11.0	-14.6	5
87 - 90		8.5	-15.7	----	6
90 - 93		16.0	-4.7	----	8

^eFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Traverse 3	Time (EST) 163017 - (a) Length of traverse 438.1 sec, 118,387 ft Initial heading (deg) 160				
93 - 96	10,500	9.4	-5.3	-----	3
96 - 99	-----	-----	-4.1	-----	1
99 - 102	11,000	-----	-----	-----	0
102 - 105	-----	-----	-6.0	-----	1
105 - 108	-----	12.2	-9.1	-----	7
108 - 111	10,500	7.8	-10.0	-----	5
111 - 114	-----	6.0	-9.7	-----	7
114 - 117	-----	11.0	-12.2	-----	4
117 - 120	-----	17.9	-12.2	-----	7
120 - 123	-----	12.9	-10.3	-----	5
123 - 126	-----	-----	-----	-----	0
Airplane 351 Traverse 4	Time (EST) 163931 - (a) Length of traverse 439.5 sec, 123,041 ft Initial heading (deg) 360				
0 - 3	11,000	20.9	-15.0	-----	5
3 - 6	-----	12.5	-7.2	10.2	6
6 - 9	-----	11.9	-6.9	10.2	4
9 - 12	-----	6.2	-6.9	-----	6
12 - 15	-----	7.5	-6.2	17.6	3
15 - 18	-----	-----	-6.5	-----	1
18 - 21	-----	-----	-----	-----	0
21 - 24	-----	-----	-----	-----	0
24 - 27	-----	-----	-----	-----	0
27 - 30	-----	-----	-----	-----	0
30 - 33	-----	-----	-----	-----	0
33 - 36	-----	-----	-4.1	-----	2
36 - 39	-----	6.9	-5.9	-----	3
39 - 42	-----	6.9	-7.5	-----	4
42 - 45	-----	8.1	-6.5	9.2	7

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Traverse 4		Time (EST) 163931 - (a) Length of traverse 439.5 sec, 123,041 ft Initial heading (deg) 360			
45 - 48	11,000	---	-8.4	---	163
48 - 51		8.7	-5.9	---	6
51 - 54		8.1	-5.6	13.9	3
54 - 57		---	---	---	0
57 - 60		3.1	---	---	1
60 - 63		---	-4.1	---	1
63 - 66		---	---	---	0
66 - 69		---	---	---	0
69 - 72		---	---	---	0
72 - 75		---	---	---	0
75 - 78		4.7	---	---	3
78 - 81		---	-4.7	-6.3	1
81 - 84		---	---	---	0
84 - 87		---	---	---	0
87 - 90		---	---	---	0
90 - 93		---	---	---	0
93 - 96		4.1	-4.7	---	3
96 - 99		---	---	---	0
99 - 102		4.1	---	---	1
102 - 105		---	---	---	0
105 - 108		---	---	---	0
108 - 111		---	-3.1	---	1
111 - 114		---	---	---	0
114 - 117		5.6	-9.0	---	4
117 - 120		3.7	---	---	1
120 - 123		---	---	---	0
123 - 126		---	---	---	0

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333		Time (EST) 144708 - 145055			
Traverse I		Length of traverse 238.6 sec, 96,032 ft			
		Initial heading (deg) 70			
0 - 3	26,500	-----	-----	-----	0
3 - 6		-----	-----	-----	0
6 - 9		-----	-----	-----	0
9 - 12		-----	-----	-----	0
12 - 15		-----	-----	-----	0
15 - 18		-----	-----	-----	0
18 - 21		9.8	-----	-----	1
21 - 24		3.8	-----	-----	1
24 - 27		6.4	-2.2	-10.5	2
27 - 30		7.6	-----	-----	1
30 - 33		11.4	-----	-----	3
33 - 36		12.7	-12.1	-----	7
36 - 39	27,000	7.6	-10.8	-----	7
39 - 42		14.9	-9.8	-----	4
42 - 45		14.6	-6.7	-----	3
45 - 48		14.6	-7.0	-----	3
48 - 51		20.3	-14.6	-----	5
51 - 54		9.5	-----	346	2
54 - 57		12.1	-4.8	-----	4
57 - 60		6.7	-7.9	31.8	6
60 - 63		10.2	-4.8	38	6
63 - 66		11.4	-----	21.6	4
66 - 69		11.4	-4.4	283	4
69 - 72		8.9	-7.0	-----	4
72 - 75		8.9	-----	-----	2
75 - 78		15.2	-----	30.8	2
78 - 81		-----	-6.7	127	1
81 - 84		7.6	-4.4	7.1	3
84 - 87	26,500	6.7	-----	166	2
87 - 90		7.3	-7.0	9.5	2
90 - 93		4.4	-6.7	85	2
93 - 96		7.0	-5.4	13.1	4
96 - 99		-----	-----	132	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_t\max$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333	Time (EST) 150049 - 150437				
Traverse 2	Length of traverse 245.5 sec, 100,301 ft				
	Initial heading (deg) 200				
0 - 3	26,000	7.6 -5.0	18.9 -----	80 -----	3
3 - 6		6.0 -7.2	----- 21.0 -----	82 -----	2
6 - 9		7.6 -5.0	13.5 -----	60 -----	4
9 - 12		3.8 -7.6	----- -----	----- -----	2
12 - 15		7.6 -----	----- -----	----- -----	2
15 - 18		6.0 -3.5	----- -----	----- -----	2
18 - 21		5.7 -3.8	14.2 -----	123 -----	4
21 - 24		11.0 -5.7	----- -----	----- -----	2
24 - 27		7.2 -3.8	----- -8.6	41 -----	7
27 - 30		6.0 -----	----- -----	----- -----	1
30 - 33		3.8 -----	----- -----	----- -----	1
33 - 36		6.3 -----	14.4 -----	194 -----	1
36 - 39		----- -3.8	----- -----	----- -----	1
39 - 42		6.0 -----	----- -----	----- -----	1
42 - 45		18.3 -3.5	----- -----	----- -----	2
45 - 48		15.1 -16.7	21.6 -----	84 -----	9
48 - 51		3.8 -4.4	----- -----	----- -----	3
51 - 54		12.6 -2.8	13.2 -13.5	164 122	4
54 - 57	26,500	11.7 -3.8	----- -----	----- -----	6
57 - 60		7.6 -7.2	----- -14.3 -----	40 -----	10
60 - 63		10.7 -7.2	17.4 -19.8	39 40	5
63 - 66		9.4 -17.3	----- -18.4	82 -----	6
66 - 69		7.2 -----	----- -----	----- -----	2
69 - 72		5.4 -5.0	13.0 -----	82 -----	5
72 - 75		13.2 -3.8	21.1 -----	246 -----	7
75 - 78		14.5 -6.9	----- -----	----- -----	7
78 - 81		7.2 -6.9	----- -17.2	81 -----	6
81 - 84	27,000	13.2 -6.9	----- -----	----- -----	6
84 - 87		18.0 -9.1	----- -----	----- -----	5
87 - 90		17.0 -17.3	----- -----	----- -----	5
90 - 93	27,500	15.7 -13.9	----- -----	----- -----	10
93 - 96	28,000	15.4 -17.6	23.8 -32.5	81 161	9
96 - 99	28,500	----- -----	----- -----	----- -----	0
99 - 102		----- -----	----- -----	----- -----	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft. $\times 10^3$	Pressure altitude (ft.)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333	Time (EST) 151735 - 152202				
Traverse 3	Length of traverse 289.2 sec, 113,804 ft				
	Initial heading (deg) 70				
0 - 3	26,500	---	---	---	0
3 - 6		---	---	---	0
6 - 9		12.8 -13.1	---	---	4
9 - 12		15.6 -8.4	34.0 -13.4	418 38	8
12 - 15	26,000	---	7.5	---	2
15 - 18		12.2 -3.7	---	---	6
18 - 21		10.6 -----	---	---	2
21 - 24	26,500	14.3 -6.9	---	---	4
24 - 27	27,000	10.3 -2.5	---	---	3
27 - 30	27,500	7.5 -11.2	---	---	6
30 - 33	28,000	19.3 -----	---	---	4
33 - 36	28,500	6.5 -4.1	---	107	4
36 - 39	29,000	2.8 -24.9	-23.8	142	5
39 - 42		18.7 -17.4	---	---	2
42 - 45		21.2 -8.4	---	---	4
45 - 48	28,500	13.4 -5.6	---	---	3
48 - 51		15.9 -5.3	---	---	3
51 - 54	28,000	---	-5.0	---	2
54 - 57	28,500	12.8 -8.4	---	---	3
57 - 60		2.5 -6.5	---	---	7
60 - 63		8.4 -7.2	---	---	3
63 - 66	28,000	11.2 -4.1	---	---	3
66 - 69		4.7 -----	---	---	3
69 - 72		4.4 -----	---	---	1
72 - 75		4.4 -6.2	-11.6	211	4
75 - 78	27,500	10.6 -3.4	---	---	3
78 - 81		4.4 -----	---	---	3
81 - 84		5.3 -----	---	---	1
84 - 87		7.2 -6.5	---	---	7
87 - 90		5.3 -----	---	---	1
90 - 93		7.5 -----	15.0	61	1
93 - 96		3.7 -----	---	---	1

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333	Time (EST) 151735 - 152202				
Traverse 3	Length of traverse 289.2 sec, 113,804 ft				
	Initial heading (deg) 70				
96 - 99	27,500	---	---	---	0
99 - 102		---	---	---	0
102 - 105		7.2	---	---	1
105 - 108		4.7	---	---	2
108 - 111		---	-5.9	---	1
111 - 114		---	---	---	0
Airplane 333	Time (EST) 152850 - 153330				
Traverse 4	Length of traverse 291.0 sec, 115,785 ft				
	Initial heading (deg) 70				
0 - 3	26,000	---	---	---	0
3 - 6		---	---	---	0
6 - 9		---	---	---	0
9 - 12		---	---	---	0
12 - 15		5.9	---	12.7	2
15 - 18		3.7	---	---	1
18 - 21		8.7	-3.4	---	3
21 - 24		7.4	-8.7	9.2	5
24 - 27		11.1	---	---	3
27 - 30		2.2	-7.4	---	4
30 - 33		3.7	---	---	1
33 - 36		3.7	---	---	1
36 - 39		3.7	-3.7	---	4
39 - 42	26,500	5.3	-6.5	---	6
42 - 45		4.6	-7.1	---	4
45 - 48		5.3	-3.7	---	2
48 - 51		2.8	-2.8	---	2
51 - 54		3.4	-5.6	---	9
54 - 57	26,000	9.0	-3.4	21.1	5
57 - 60		4.9	-6.8	---	5
60 - 63		10.5	-7.4	252	4

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333	Traverse 4	Time (EST) 152850 - 153330	Length of traverse 291.0 sec, 115,785 ft		
		Initial heading (deg) 70			
63 - 66	26,000	6.2	4.3	-----	5
66 - 69		17.0	-7.4	-----	4
69 - 72		5.9	-7.1	-----	5
72 - 75	25,500	7.4	-----	-----	2
75 - 78	25,000	5.3	-9.9	-----	3
78 - 81		10.2	-4.6	-----	3
81 - 84		4.9	-5.3	-----	4
84 - 87		7.7	-3.7	-----	3
87 - 90	25,500	6.8	-7.1	-----	5
90 - 93		15.5	-6.5	-----	4
93 - 96		9.6	-10.5	-----	8
96 - 99	26,000	16.4	-10.5	-24.0	78
99 - 102		13.3	-6.8	-----	8
102 - 105		13.3	-13.6	-----	4
105 - 108		14.8	-3.1	-----	5
108 - 111	26,500	10.8	-10.8	-----	8
111 - 114	27,000	-----	-9.6	-----	1
114 - 117	27,500	-----	-----	-----	0
Airplane 351	Traverse 1	Time (EST) 145054 - 145507	Length of traverse 109.5 sec, 38,532 ft		
		Initial heading (deg) 90			
0 - 3	21,000	-----	-----	-----	0
3 - 6		-----	-----	-----	0
6 - 9		3.8	-5.4	-15.4	72
9 - 12		7.6	-6.3	-----	2
12 - 15		11.1	-10.2	20.7	54
15 - 18		4.8	-----	-----	1
18 - 21		19.4	-8.9	25.2	4
21 - 24	21,500	35.5	-14.3	-----	7
24 - 27	22,500	14.3	-27.3	-----	9

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_t\max$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 351	Traverse 1	Time (EST) 145054 - 145245 Length of traverse 109.5 sec, 38,532 ft Initial heading (deg) 90			
27 - 30	23,000	18.7	-17.1	-----	6
30 - 33	23,500	13.3	-13.6	-----	4
33 - 36		22.8	-13.6	16.6	6
36 - 39	24,000	6.0	-18.1	-----	6
Airplane 351	Traverse 2	Time (EST) 150411 - 150736 Length of traverse 204.4 sec, 74,628 ft Initial heading (deg) 150			
0 - 3	23,500	-----	-----	-----	0
3 - 6		-----	-----	-----	0
6 - 9		-----	-----	-----	0
9 - 12		7.3	-----	-----	2
12 - 15	23,000	7.6	-3.2	-----	4
15 - 18		7.6	-8.5	9.0	5
18 - 21		7.0	-8.5	-----	5
21 - 24		8.2	-2.8	-----	3
24 - 27		10.4	-----	-----	2
27 - 30	23,500	-----	-9.5	-----	3
30 - 33		6.3	-6.0	-----	4
33 - 36		9.2	-7.6	15.9	4
36 - 39		12.0	-5.1	24.1	5
39 - 42		4.1	-9.2	-----	3
42 - 45		7.6	-9.2	8.3	4
45 - 48		8.5	-9.5	-----	7
48 - 51		9.5	-8.2	-----	6
51 - 54		13.3	-10.1	26.1	4
54 - 57		5.7	-8.5	13.4	5
57 - 60		-----	-7.0	-----	4
60 - 63	23,000	5.7	-----	-----	1
63 - 66		5.7	-3.8	-----	2
66 - 69		-----	-4.7	-----	1
69 - 72		-----	-5.7	-----	1
72 - 75		-----	-----	-----	0

TABLE I.-- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
<i>Airplane 351</i>					
0 - 3	19,500	---	-2.8	---	1
3 - 6		6.6	-5.0	14.1	7
6 - 9		---	-9.4	21.0	3
9 - 12		5.7	-5.7	10.5	4
12 - 15		5.7	---	24.7	1
15 - 18		---	-5.7	12.0	1
18 - 21		---	---	12.4	0
21 - 24		18.8	-7.5	17.6	7
24 - 27		4.1	-11.3	---	3
27 - 30		23.9	-13.8	16.8	6
30 - 33		11.3	-28.6	---	6
33 - 36		5.7	---	---	1
36 - 39		---	---	---	0
39 - 42		---	---	---	0
42 - 45		---	---	---	0
45 - 48		---	---	---	0
48 - 51		---	---	---	0
51 - 54		---	---	---	0
54 - 57		---	---	---	0
57 - 60		---	---	---	0
60 - 63		---	---	---	0
63 - 66	20,000	---	---	---	0
66 - 69		---	---	---	0
<i>Airplane 351</i>					
0 - 3	20,000	---	---	---	0
3 - 6		---	-6.3	---	1
6 - 9		---	-6.3	-17.7	1
9 - 12		3.8	-7.5	-14.8	4

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 351 Traverse 4		Time (EST) 152130 - 152549			
		Length of traverse 252.7 sec, 90,418 ft			
		Initial heading (deg) 120			
12 - 15	19,500	3.8	-5.6	10.1	---
15 - 18		7.8	-6.3	---	18.9
18 - 21		18.5	-12.9	9.2	---
21 - 24		8.5	-12.5	---	27.6
24 - 27		11.6	-8.8	15.1	---
27 - 30		11.0	-11.9	---	---
30 - 33		11.0	-13.5	20.6	---
33 - 36		12.5	-5.0	25.5	-15.7
36 - 39		5.6	-3.4	8.6	---
39 - 42	20,000	11.9	-11.3	15.5	---
42 - 45	19,500	12.5	-6.6	---	---
45 - 48	19,000	12.2	-6.6	19.9	-25.9
48 - 51		15.7	-5.6	29.1	-18.7
51 - 54		15.4	-7.5	10.5	---
54 - 57		17.2	-4.1	---	---
57 - 60		5.0	-11.6	---	---
60 - 63		7.2	-10.7	---	22.7
63 - 66	19,500	12.2	-9.4	---	---
66 - 69		15.0	-12.2	20.5	---
69 - 72	20,000	8.8	-9.4	---	---
72 - 75	20,500	13.5	-10.0	---	---
75 - 78	21,000	9.1	-9.4	---	---
78 - 81		10.7	-13.5	17.0	---
81 - 84	21,500	6.6	-16.3	16.0	---
84 - 87		28.2	-25.4	37.8	---
87 - 90		8.5	-18.8	41	---
90 - 93		---	---	---	0

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 351		Time (EST) - (c) 152132 - 152548			
Traverse 5		Length of traverse 280.5 sec, 100,448 ft			
		Initial heading (deg) - (c)			
0 - 3	21,000	-5.9	74		1
3 - 6		10.0 -9.3	13.2	74	8
6 - 9		6.2 -5.0	17.3 -15.8	107 74	4
9 - 12		16.2 -10.3	37.5	407	4
12 - 15	21,500	12.1 -8.7			7
15 - 18		19.3 -10.3			9
18 - 21	22,000	4.7 -5.9			5
21 - 24		13.1 -10.0	24.3	107	5
24 - 27	22,500	5.3 -11.8			4
27 - 30		9.0 -10.9	10.2 -19.6	142 107	5
30 - 33		5.3 -5.9			3
33 - 36		5.3 -5.9	16.3	108	5
36 - 39		3.7 -7.5	7.8	248	5
39 - 42	22,000	5.0			2
42 - 45		7.5 -5.6	13.3	75	7
45 - 48		-9.3	-17.9	75	2
48 - 51		8.7 -9.3	-10.7	188	4
51 - 54		5.0 -5.6			3
54 - 57		4.0			1
57 - 60		3.7 -5.6	9.5 -18.1	151 112	3
60 - 63		-9.3	-16.7	222	2
63 - 66	22,500				0
66 - 69		7.8 -10.0	12.7 -15.6	36 72	3
69 - 72					0
72 - 75					0
75 - 78					0
78 - 81					0
81 - 84					0
84 - 87		5.6 -3.7	13.0	276	3
87 - 90		-5.6			1
90 - 93	23,000	-7.2	-12.0	239	2

^cNo motion-picture records obtained.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 351 Traverse 5		Time (EST) - (c) 152132 - 152548 Length of traverse 280.5 sec, 100,448 ft Initial heading (deg) - (c)			
93 - 96	23,000	3.1	-6.5	---	2
96 - 99		---	---	---	0
99 - 102		5.6	-4.0	---	3
Airplane 345 Traverse 1		Time (EST) - (c) Length of traverse 430.9 sec, 142,161 ft Initial heading - (c)			
0 - 3	16,000	---	-2.6	---	2
3 - 6		---	---	---	1
6 - 9		---	---	---	0
9 - 12		---	---	---	1
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21		---	---	---	0
21 - 24		---	---	---	0
24 - 27		---	---	---	0
27 - 30		---	---	---	0
30 - 33		---	---	---	0
33 - 36		---	---	---	0
36 - 39		---	---	---	0
39 - 42		---	---	---	0
42 - 45		---	-2.9	---	1
45 - 48		2.6	-3.5	---	5
48 - 51		---	---	---	1
51 - 54		3.2	---	---	4
54 - 57		---	-3.5	---	2
57 - 60		---	---	---	0
60 - 63		2.9	4.2	102	3
63 - 66		---	---	---	4
66 - 69		---	---	---	1

^cNo motion-picture records obtained.NATIONAL ADVISORY
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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft).	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345	Time (EST) - (c)				
Traverse 1	Length of traverse 430.9 sec, 142,161 ft				
Initial heading - (c)					
69 - 72	16,000	---	---	---	0
72 - 75		---	---	---	1
75 - 78		2.6	3.3	134	3
78 - 81		---	3.5	---	1
81 - 84		---	---	---	0
84 - 87		---	---	---	1
87 - 90		---	---	---	1
90 - 93		19.2	5.8	---	8
93 - 96		9.3	8.0	---	8
96 - 99		10.9	5.4	174	11
99 - 102		5.4	7.4	---	9
102 - 105	16,500	3.5	-3.2	---	6
105 - 108		---	---	---	3
108 - 111		---	---	66	1
111 - 114		---	---	---	1
114 - 117		---	4.8	---	5
117 - 120		2.6	6.1	363	1
120 - 123		---	---	---	2
123 - 126		---	---	---	3
126 - 129		11.5	-12.2	---	5
129 - 132		20.5	-9.9	---	11
132 - 135	17,000	14.1	-12.5	---	11
135 - 138		14.1	-17.6	-22.3	5
138 - 141		6.7	-18.2	95	4
141 - 144		---	---	---	0

^cNo motion-picture records obtained.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval $ft \times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts	
August 22, 1946 - Flight 26						
Airplane 345	Traverse 2	Time (EST) - (c)		Length of traverse 552.8 sec, 186,000 ft		
		Initial heading - (c)				
0 - 3		16,000	-----	-----	0	
3 - 6		-----	-----	-----	0	
6 - 9		-----	-----	-----	0	
9 - 12		-----	-----	-----	0	
12 - 15	15,500	-----	-----	-----	0	
15 - 18		-----	-----	-----	2	
18 - 21		-----	-----	-----	0	
21 - 24		-----	-----	-----	0	
24 - 27		10.5	-4.4	10.4	12	
27 - 30		10.5	-9.5	11.2	6	
30 - 33		6.3	-7.6	-----	8	
33 - 36		5.4	-2.9	10.5	5	
36 - 39		3.8	-4.8	227	4	
39 - 42		-----	-----	-----	0	
42 - 45		5.1	-3.5	9.5	2	
45 - 48		-----	-----	-----	0	
48 - 51		3.2	-----	6.8	4	
51 - 54		-----	-4.8	95	4	
54 - 57		11.4	-5.4	-----	8	
57 - 60		10.2	-8.3	-----	9	
60 - 63		10.5	-6.0	-----	10	
63 - 66		12.1	-8.6	-----	13	
66 - 69	16,000	11.7	-7.9	-----	8	
69 - 72	16,500	9.8	-20.6	-----	5	
72 - 75		20.0	-21.6	-----	9	
75 - 78		10.2	-12.7	-----	5	
78 - 81	16,000	5.4	-4.8	-----	8	
81 - 84		7.3	-7.9	-----	10	
84 - 87		12.4	-21.9	-----	6	
87 - 90		10.2	-20.6	21.2	6	
90 - 93		10.8	-7.0	133	5	

^cNo motion-picture records obtained.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
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August 22, 1946 - Flight 26

Airplane 345	Time (EST) - (c)
Traverse 2	Length of traverse 552.8 sec, 186,000 ft
	Initial heading - (c)
93 - 96	16,000
96 - 99	16,500
99 - 102	17,000
102 - 105	17,500
105 - 108	18,000
108 - 111	17,500
111 - 114	18,000
114 - 117	17,500
117 - 120	18,000
120 - 123	17,500
123 - 126	18,000
126 - 129	17,500
129 - 132	18,000
132 - 135	17,500
135 - 138	18,000
138 - 141	17,500
141 - 144	18,000
144 - 147	17,500
147 - 150	18,000
150 - 153	17,500
153 - 156	18,000
156 - 159	17,500
159 - 162	18,000
162 - 165	17,500
165 - 168	18,000
168 - 171	17,500
171 - 174	18,000
174 - 177	17,500
177 - 180	18,000
180 - 183	17,500
183 - 186	18,000

^cNo motion-picture records obtained.

TABLE I. - SUMMARY OF GUST MEASUREMENTS. - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345	Time (EST) - (c)				
Traverse 3	Length of traverse 332.7 sec, 109,628 ft				
	Initial heading - (c)				
0 - 3	16,000	---	---	---	0
3 - 6		---	---	---	0
6 - 9		---	---	---	0
9 - 12		---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21		5.6	-9.7	---	6
21 - 24		20.4	-10.4	---	5
24 - 27	16,500	13.8	-24.2	---	9
27 - 30		---	-6.3	-6.9	6
30 - 33		14.1	-5.0	---	9
33 - 36		16.9	-14.8	---	5
36 - 39		16.6	-15.4	---	12
39 - 42	17,000	19.8	-6.6	---	8
42 - 45	17,500	14.1	-12.9	-10.6	333
45 - 48	18,000	6.9	-17.3	---	6
48 - 51	18,500	22.9	-15.7	---	6
51 - 54		10.0	-9.4	---	7
54 - 57		11.6	-9.7	---	9
57 - 60		22.0	-22.3	---	5
60 - 63		5.6	-8.2	---	4
63 - 66	18,000	5.0	-6.0	18.0	6
66 - 69		10.4	-4.4	---	7
69 - 72	17,500	12.9	-3.1	---	7
72 - 75		9.7	-6.3	---	8
75 - 78		10.7	-8.8	10.7	7
78 - 81		5.0	-6.0	5.7	9
81 - 84		6.0	-8.8	---	2
84 - 87		5.3	-7.5	10.8	7
87 - 90	17,000	5.6	-5.3	10.2	4
90 - 93		4.7	-6.0	-5.5	3

^cNo motion-picture records obtained.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345	Time (EST) - (c)				
Traverse 3	Length of traverse 332.7 sec, 109,628 ft				
	Initial heading - (c)				
93 - 96	17,000	4.1 -6.0	---	-6.8	---
96 - 99		6.0 -4.7	12.0	---	273
99 - 102		3.1 -2.8	---	---	---
102 - 105	16,500	4.4	8.8	228	2
105 - 108		---	---	---	9
108 - 111		---	---	---	1
Airplane 345	Time (EST) - (c)				
Traverse 4	Length of traverse 422.6 sec - (d)				
	Initial heading - (c)				
0 - 3	15,500	---	---	---	0
3 - 6		---	---	---	0
6 - 9		---	---	---	0
9 - 12	16,000	---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21	15,500	---	---	---	0
21 - 24		---	---	---	0
24 - 27		---	---	---	0
27 - 30		---	---	---	0
30 - 33	16,000	---	---	---	1
33 - 36		2.5 -3.4	---	---	5
36 - 39		4.1 -5.9	13.6	183	7
39 - 42		4.1 -4.4	---	---	8
42 - 45		4.7 -4.4	-16.8	175	5
45 - 48	16,500	---	---	---	5
48 - 51		---	-4.1	---	5
51 - 54	16,000	---	-3.1	---	5
54 - 57		3.1 -2.5	---	---	5
57 - 60		---	---	---	1

^cNo motion-picture records obtained.^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345 Traverse 4		Time (EST) - (c) Length of traverse 422.6 sec - (d) Initial heading - (c)			
60 - 63	16,000	-----	-----	-----	0
63 - 66		-----	3.1	-----	5
66 - 69		-----	-----	-----	3
69 - 72		-----	-----	-----	4
72 - 75		-----	-----	-----	2
75 - 78		-----	-----	-----	0
78 - 81		-----	-----	-----	0
81 - 84		-----	-----	-----	0
Airplane 331 Traverse 1		Time (EST) 144041 - (a) Length of traverse 519.2 sec, 155,798 ft Initial heading (deg) 10			
0 - 3	10,500	12.9	-----	-----	4
3 - 6		3.5	-----	-----	3
6 - 9		-----	-----	-----	0
9 - 12		-----	-----	-----	0
12 - 15		-----	-----	-----	0
15 - 18		3.9	-----	-----	2
18 - 21		-----	-----	-----	0
21 - 24		-----	-----	-----	0
24 - 27		-----	-----	-----	0
27 - 30		-----	-----	-----	0
30 - 33		-----	-----	-----	0
33 - 36		-----	-----	-----	0
36 - 39		-----	-----	-----	0
39 - 42		-----	-----	-----	0
42 - 45		1.9	-----	-----	1

^aFilm supply for motion-picture camera exhausted before end of traverse.

^cNo motion-picture records obtained.

^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331	Time (EST) 144041 - (a)				
Traverse 1	Length of traverse 519.2 sec, 155,798 ft				
	Initial heading (deg) 10				
45 - 48	10,500	7.7	-6.1	48	10
48 - 51		6.4	-8.0	121	4
51 - 54		5.8	-7.7	30	4
54 - 57		3.9	-7.1	74	6
57 - 60		-----	-----	-----	0
60 - 63		-----	-----	-----	0
63 - 66		2.6	-2.6	-----	5
66 - 69		4.5	-6.1	-----	7
69 - 72		8.0	-6.4	-----	4
72 - 75		5.6	-6.1	-----	3
75 - 78		-----	-2.6	-----	3
78 - 81		3.9	-1.6	-----	4
81 - 84		4.5	-----	-----	1
84 - 87		3.2	-4.2	92	4
87 - 90		2.6	-1.9	-----	3
90 - 93		-----	-----	-----	0
93 - 96		-----	-----	-----	0
96 - 99		-----	-1.9	-----	3
99 - 102		4.5	-----	-----	2
102 - 105		4.8	-3.2	118	3
105 - 108		5.1	-1.9	87	2
108 - 111		6.7	-5.1	120	4
111 - 114		11.2	-9.0	-----	8
114 - 117		15.4	-9.0	-----	6
117 - 120		9.6	-13.5	-----	7
120 - 123		4.5	-4.8	61	4
123 - 126		-----	-----	-----	0
126 - 129		6.7	-3.2	-----	6

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331	Traverse 1	Time (EST) - (a) Length of traverse 519.2 sec, 155,798 ft Initial heading (deg) 10			
129 - 132	10,500	17.0	-9.3	---	7
132 - 135		12.9	-13.8	---	9
135 - 138		9.6	-6.7	---	10
138 - 141		12.9	-4.8	---	10
141 - 144		6.7	-19.0	-27.2	4
144 - 147		3.2	-8.7	---	2
147 - 150	10,000	16.1	-8.7	---	7
150 - 153		14.1	-10.6	---	6
153 - 156		---	-1.9	---	1
Airplane 331	Traverse 2	Time (EST) 145745 - (a) Length of traverse 544.2 sec, 170,871 ft Initial heading (deg) 190			
0 - 3	10,500	---	---	---	0
3 - 6		---	---	---	0
6 - 9		---	---	---	0
9 - 12		---	---	---	0
12 - 15		4.1	-2.9	---	2
15 - 18		8.0	-5.4	---	6
18 - 21		5.4	-9.6	-24.8	6
21 - 24		8.3	-7.3	---	10
24 - 27		2.9	-11.1	---	8
27 - 30		6.7	-5.7	---	10
30 - 33		16.2	-11.1	---	7
33 - 36		13.1	-5.7	---	5
36 - 39		7.0	-4.1	---	5
39 - 42		5.7	---	---	1
42 - 45		---	-3.2	---	3

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331	Time (EST) 145745 - (a)				
Traverse 2	Length of traverse 544.2 sec, 170,871 ft				
	Initial heading (deg) 190				
45 - 48	10,500	3.8	-1.6	---	3
48 - 51		3.2	-4.5	---	3
51 - 54		---	-1.9	---	2
54 - 57		---	---	---	0
57 - 60		---	-1.9	---	2
60 - 63		4.5	-2.5	4.5	3
63 - 66		12.1	-6.4	9.6	8
66 - 69		6.4	-11.8	---	5
69 - 72		3.2	-5.7	12.1	5
72 - 75		8.9	-7.0	---	11
75 - 78		19.1	-10.8	---	13
78 - 81		12.1	-15.0	---	11
81 - 84		16.2	-15.6	---	12
84 - 87		22.0	-10.8	---	8
87 - 90		8.3	---	---	3
90 - 93		9.6	-7.6	---	3
93 - 96		11.1	-11.8	---	7
96 - 99		16.9	-15.3	---	9
99 - 102		6.4	-3.8	---	6
102 - 105		22.6	-22.0	32.9	7
105 - 108		15.0	-9.2	199	9
108 - 111		18.2	-9.6	---	5
111 - 114	11,000	20.1	-5.4	---	7
114 - 117		19.4	-12.7	---	7
117 - 120	12,000	---	-9.9	---	3
120 - 123		21.3	-18.5	---	4
123 - 126		6.4	-10.5	---	10
126 - 129		17.5	-4.1	---	11
129 - 132		12.1	-3.8	---	6

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Traverse 2					
132 - 135	12,500	17.2	-16.6	----	10
135 - 138		17.5	-9.6	48.1	6
138 - 141		8.9	-9.9	12.5	7
141 - 144	13,000	16.6	-11.1	----	3
144 - 147	13,500	12.4	-18.5	----	6
147 - 150		8.9	-7.6	----	4
150 - 153	14,000	11.5	-15.6	----	11
153 - 156		14.3	-15.6	----	9
156 - 159		20.4	-8.3	37.1	10
159 - 162	14,500	8.6	-32.2	11.2	9
162 - 165		----	----	----	0
165 - 168		----	----	----	0
168 - 171		----	-3.8	-6.7	1
Airplane 331 Traverse 3					
0 - 3	10,500	6.9	----	----	1
3 - 6	11,000	----	----	----	0
6 - 9		----	----	----	0
9 - 12	10,500	----	----	----	0
12 - 15		----	----	----	0
15 - 18		----	----	----	0
18 - 21		4.1	-3.8	----	5
21 - 24		3.2	-1.9	----	2
24 - 27		----	----	----	0
27 - 30		----	----	----	0
30 - 33		16.1	-8.5	-13.9	8

^aFilm supply for motion-picture camera exhausted before end of traverse.^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued.

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Time (EST) 151357 - (a) Traverse 3 Length of traverse - (d) Initial heading (deg) 60					
33 - 36	10,500	17.7	-10.4	---	9
36 - 39		12.0	-11.0	---	9
39 - 42	11,000	7.9	-7.3	---	8
42 - 45		14.5	-8.8	24.8	5
45 - 48	10,500	21.1	-17.0	---	9
48 - 51		18.9	-9.8	---	7
51 - 54	11,000	19.2	-8.5	---	14
54 - 57	11,500	20.8	-14.2	---	6
57 - 60		18.9	-13.2	---	5
60 - 63		14.2	-16.4	---	9
63 - 66	12,000	15.1	-22.4	---	6
66 - 69	11,500	24.6	-13.9	---	5
69 - 72	12,000	22.7	-26.2	-30.3	7
72 - 75	13,000	6.0	-7.6	---	4
75 - 78		11.3	-10.7	16.1	5
115					
Airplane 347 Time (EST) - (b) Traverse 1 Length of traverse 606.0 sec, 172,582 ft Initial heading (deg) 50					
0 - 3	6,000	2.5	----	----	2
3 - 6		6.2	-6.2	4.3	4
6 - 9		8.1	-11.5	12.2	6
9 - 12		4.4	-4.4	-12.6	6
12 - 15		3.7	-2.8	----	7
15 - 18		2.5	----	----	1
18 - 21		5.3	-1.9	8.5	2
21 - 24		4.7	----	3.5	5
89					

^aFilm supply for motion-picture camera exhausted before end of traverse.^bClock not in field of view of motion-picture camera.^cFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued.

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
24 - 27	6,000	1.9	---	---	1
27 - 30		---	-4.4	---	1
30 - 33		---	-2.5	---	4
33 - 36		3.1	-4.4	6.4	2
36 - 39		5.9	-2.2	---	3
39 - 42		2.8	---	---	1
42 - 45		---	---	-3.9	1
45 - 48		1.9	-2.5	3.1	2
48 - 51		---	---	84	0
51 - 54		3.4	---	---	1
54 - 57		1.9	-2.8	3.9	6
57 - 60		4.4	-4.7	---	6
60 - 63		5.0	-2.5	6.4	5
63 - 66		3.4	-3.1	---	4
66 - 69		3.1	-2.8	---	4
69 - 72		5.3	-3.4	-4.3	7
72 - 75	5,500	4.4	-2.2	3.4	4
75 - 78		---	---	116	0
78 - 81		---	---	---	0
81 - 84	6,000	4.1	---	---	1
84 - 87		---	---	---	0
87 - 90		---	---	---	0
90 - 93		---	---	---	0
93 - 96		---	---	---	0
96 - 99		---	---	---	0
99 - 102		2.8	---	---	3
102 - 105		2.2	---	---	2
105 - 108		---	---	---	0
108 - 111		2.8	1.5	57	3

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347	Traverse 1 Time (EST) - (b) Length of traverse 606.0 sec, 172,582 ft Initial heading (deg) 50				
111 - 114		6,000	2.5	-----	1
114 - 117		-----	-----	-----	0
117 - 120		8.4	-----	82	2
120 - 123		7.2	-10.9	86	7
123 - 126		3.4	-4.7	-----	2
126 - 129		3.4	-4.1	82	8
129 - 132		5.9	-6.2	-----	5
132 - 135		3.4	-3.7	263	6
135 - 138		1.6	-3.7	86	4
138 - 141		5.3	-----	177	3
141 - 144		15.3	-5.9	87	8
144 - 147		5.0	-11.5	-----	7
147 - 150		9.7	-11.5	-----	11
150 - 153		9.7	-4.4	-----	5
153 - 156		10.0	-11.5	111	8
156 - 159		3.1	-9.4	-----	6
159 - 162		15.0	-----	-----	2
162 - 165	5,500	3.1	-----	-----	1
165 - 168	6,000	7.8	-11.9	121	2
168 - 171		5.6	-9.4	-----	4
Airplane 347	Traverse 2 Time (EST) - (b) Length of traverse 535.3 sec, 154,466 ft Initial heading (deg) 190				
0 - 3		6,000	-----	-----	0
3 - 6		6.4	-4.8	11.0	7
6 - 9		14.3	-6.4	112	8
9 - 12		10.2	-9.2	-----	9
12 - 15		14.3	-10.8	-----	7

^bClock not in field of view of motion-picture camera.

TABLE I-- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347 Traverse 2					
15 - 18	6,000	4.4	-4.8	---	8
18 - 21		5.1	-6.7	3.7	4
21 - 24		7.0	---	---	4
24 - 27		5.7	-3.2	---	3
27 - 30		4.4	---	---	2
30 - 33		---	---	---	0
33 - 36		---	---	---	0
36 - 39		4.8	---	---	1
39 - 42		2.2	---	---	1
42 - 45		2.5	-2.2	---	2
45 - 48		3.8	-5.7	5.5	3
48 - 51		5.4	-4.8	-5.6	5
51 - 54		2.9	---	---	3
54 - 57		4.8	-7.0	---	2
57 - 60		15.6	-4.4	---	3
60 - 63		2.2	-2.5	---	5
63 - 66	5,500	4.8	---	---	2
66 - 69		---	---	---	0
69 - 72		---	---	---	0
72 - 75		5.1	---	---	2
75 - 78	6,000	5.1	-3.5	---	2
78 - 81		---	-3.2	---	2
81 - 84		2.9	---	---	1
84 - 87		2.5	---	3.1	1
87 - 90		12.1	-6.4	6.9	7
90 - 93		11.8	-11.5	-10.0	4
93 - 96		6.0	-4.4	---	5
96 - 99		5.7	-2.9	-9.7	3
99 - 102		17.1	-13.3	10.2	8

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347					
Traverse 2					
Time (EST) - (b) Length of traverse 535.3 sec, 154,466 ft Initial heading (deg) 190					
102 - 105	6,000	9.2	-14.3	4.9	---
105 - 108		4.4	-7.3	---	8.9
108 - 111		10.5	-6.0	---	---
111 - 114		14.9	-16.8	---	---
114 - 117		18.4	-1.6	---	---
117 - 120		16.5	-9.5	8.0	29
120 - 123		14.0	---	---	---
123 - 126	6,500	---	-4.4	---	---
126 - 129		8.3	---	---	---
129 - 132		13.7	---	8.5	154
132 - 135	7,000	12.1	-11.4	---	---
135 - 138		---	-7.3	---	6.0
138 - 141		18.4	-3.5	---	117
141 - 144		5.4	-3.8	---	87
144 - 147		14.6	-6.7	---	87
147 - 150	6,500	5.7	-7.6	---	7
150 - 153		8.9	-3.5	---	3
153 - 156		4.4	-6.4	---	3
Airplane 347					
Traverse 3					
Time (EST) - (b) Length of traverse 386.0 sec, 112,298 ft Initial heading (deg) 90					
0 - 3	6,000	---	---	---	0
3 - 6		---	-2.5	---	1
6 - 9		4.3	-4.3	---	6
9 - 12		9.5	-2.2	4.3	4
12 - 15		---	---	58	0
15 - 18		9.2	---	16.3	4

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
<i>Airplane 347</i> <i>Time (EST) - (b)</i> Traverse 3 <Length of traverse 386.0 sec, 112,298 ft Initial heading (deg) 90					
18 - 21	6,000	4.3 -----	-----	-----	4
21 - 24	6,500	8.3 -9.5	----- -14.4	----- 230	5
24 - 27	6,000	6.2 -9.8	-----	-----	5
27 - 30		13.8 -----	6.8 -----	184 -----	4
30 - 33		-----	-----	-----	0
33 - 36	6,500	5.2 -----	-----	-----	2
36 - 39	7,000	----- -7.1	-----	-----	8
39 - 42		5.8 -7.1	-----	-----	5
42 - 45		11.4 -----	-----	-----	1
45 - 48	7,500	----- -14.5	----- -27.2	----- 317	4
48 - 51	8,000	14.1 -6.2	-----	-----	3
51 - 54		13.2 -4.0	10.2 -----	89 -----	5
54 - 57		8.9 -12.6	-----	-----	6
57 - 60		25.2 -4.9	3.5 -----	121 -----	5
60 - 63	8,500	11.1 -20.0	----- -23.4	----- 233	6
63 - 66	8,000	6.5 -11.1	-----	-----	5
66 - 69		7.4 -----	-----	-----	3
69 - 72		9.8 -6.8	-----	-----	4
72 - 75		----- -2.5	-----	-----	1
75 - 78		6.5 -4.3	-----	-----	2
78 - 81		4.0 -9.2	-----	-----	3
81 - 84		4.9 -3.4	-----	-----	7
84 - 87		----- -3.4	-----	-----	11
87 - 90	7,500	5.5 -----	4.3 -----	293 -----	1
90 - 93		-----	-----	-----	0
93 - 96	7,000	3.7 -----	----- -1.9	91 -----	2
96 - 99		-----	-----	-----	0
99 - 102		-----	-----	-----	0
102 - 105	6,500	2.5 -----	-----	-----	1
105 - 108		-----	-----	-----	0
108 - 111		-----	-----	-----	0

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Concluded

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347 traverse 4		Time (EST) - (c) Length of traverse 212.2 sec - (d) Initial heading - (e)			
0 - 3	6,000	----	----	----	0
3 - 6		2.5	----	----	1
6 - 9		----	----	----	0
9 - 12		----	----	----	0
12 - 15		4.6	-2.5	----	3
15 - 18		14.8	-3.1	-9.5	172
18 - 21		12.6	-6.2	-5.5	86
21 - 24		15.1	-9.2	-13.0	117
24 - 27		5.5	-8.9	----	6

^c No motion-picture records obtained.

^d Film supply for airspeed-altitude recorder exhausted before end of traverse.

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TABLE II.- SUMMARY OF DRAFT VELOCITY MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Transverse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)		
					Start	End				
8-21-46	25	333	26,000	1	13,512	26,831	13,319	- 9.7		
					30,723	37,292	6,569	17.5		
				2	59,075	65,300	6,225	-17.2		
					a ₃					
		331	21,000	1	59,322	61,491	2,169	25.3		
					102,200	115,550	13,350	10.0		
		347	16,000	a ₁	13,950	23,500	9,550	32.6		
					22,224	34,516	12,292	6.5		
					57,782	68,110	10,328	9.5		
					99,092	106,787	7,695	12.2		
				2	111,200	115,800	4,600	23.8		
					19,000	27,200	8,200	17.3		
					40,711	47,514	6,803	-16.4		
					72,735	76,064	3,329	26.8		
		351	11,000	1	83,297	87,692	4,395	11.3		
					a ₂					
				3	6,448	12,172	5,724	- 6.7		
					82,986	88,495	5,509	-22.5		
		347	6,000	1	9,378	15,075	5,697	11.5		
					26,513	31,659	5,146	13.2		
8-22-46	26			2	11,728	22,817	11,089	- 8.5		
					121,101	133,687	12,586	26.0		
					139,712	144,167	4,455	-66.7		

^aNo draft velocities indicated by records.

TABLE II.- SUMMARY OF DRAFT VELOCITY MEASUREMENTS - Continued

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Traverse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
8-22-46	26	347	6,000	a ₃				
				a ₄				
		331	11,000	1	50,676 117,840	53,882 121,260	3,206 3,420	17.2 -21.9
				2	24,969 86,739 112,393 129,495 157,330	30,926 89,543 119,553 150,309 159,710	5,957 2,804 7,160 20,814 2,380	-16.4 -36.3 84.0 34.2 77.0
				3	50,736 68,576 87,000	63,158 78,849 91,822	12,422 10,273 4,822	34.6 58.9 52.0
	345	16,000		1	86,724 111,169 129,400	111,169 115,854 138,050	24,445 4,685 8,650	10.3 -15.0 36.1
				2	56,664 76,831 99,299 136,183 159,665	72,300 81,167 111,700 138,678 161,979	15,636 4,336 11,401 2,495 2,314	18.6 -33.5 56.1 -35.9 30.3
				3	21,800	47,600	25,800	32.0
				4	32,956	38,500	5,544	22.0
				1	20,350	36,000	15,650	59.4
	351	21,000		2	57,757	65,986	8,229	-17.2
				a ₃				
				4	17,819 25,642	25,642 50,847	7,823 25,205	-15.1 30.3

^aNo draft velocities indicated by records.

TABLE II.-- SUMMARY OF DRAFT VELOCITY MEASUREMENTS - Concluded

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Traverse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
8-22 46	26	351	21,000	5	10,617 42,259	29,535 54,692	18,918 9,433	29.4 - 6.4
		333	26,000	1	18,478 25,757 54,693	23,277 35,766 59,795	4,799 10,009 5,102	13.3 26.2 20.2
				2	13,053 41,108 53,253	23,658 48,420 63,842	10,605 7,312 10,589	-16.9 21.1 22.1
				3	18,916 41,115 50,798 62,752 78,271 93,031	39,117 50,798 56,441 78,271 93,031 102,267	20,201 9,683 5,643 15,519 14,760 9,236	65.6 -46.2 29.0 -30.8 9.9 -17.5
				4	12,667 34,467 58,360 80,445	19,314 43,147 80,445 102,570	6,647 8,680 22,085 22,125	-16.4 15.0 -18.1 22.1

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TABLE III - SUMMARY OF MEASUREMENTS OF AMBIENT
AIR TEMPERATURE WITHIN THUNDERSTORMS

Date	Flight no.	Airplane no.	Traverse no.	Time (EST)	Distance from cloud entry (ft.)	Milliammeter reading
8-21-46	26	351	2	150441	0	99
				150530	17,075	98
				150600	29,100	98
				150630	40,500	99
				150700	51,750	99
				150730	60,250	106
			3	150821	0	110
				150900	15,250	110
				150930	27,500	107
				151000	39,750	103
				151030	51,200	105
				151100	61,500	100
			4	152130	0	110
				152200	10,000	115
				152230	20,000	116
				152300	31,250	120
				152330	42,900	120
				152400	53,700	120
				152430	54,500	120
				152500	75,200	120
				152530	85,500	124
			331	144041	0	120
				144130	14,700	115
				144200	24,000	110
				144230	33,300	110
				144300	42,800	110
				144330	51,800	120
				144400	60,750	120
				144430	69,800	120
				144500	78,600	130
				144530	87,750	125
				144600	96,600	120
				144630	105,500	125
				144700	114,250	150
				144730	123,250	150
				144740	126,250	150

TABLE III.- SUMMARY OF MEASUREMENTS - Concluded

Date	Flight no.	Airplane no.	Traverse no.	Time (EST)	Distance from cloud entry (ft)	Milliammeter reading
8-21-46	26	331	2	145745	0	295
				145830	14,200	300
				145700	23,600	320
				145930	33,200	320
				150000	42,300	340
				150030	51,100	350
				150100	60,200	360
				150130	69,200	360
				150200	78,250	350
				150230	87,750	360
			3	150300	97,200	380
				150330	106,200	330
				150345	110,800	320
				150400	116,300	340
				150430	125,750	370
				150440	128,900	370
				151357	0	320
				151430	10,500	315
				151500	20,100	300
				151530	29,700	300

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